

## CLAIMS:

1. A method for treating acute promyelogenous leukemia, comprising determining a dosage amount of arsenic trioxide for the treatment of a patient diagnosed with acute promyelogenous leukemia, based on the weight of the patient and a dose of a therapeutically effective amount of about 0.15 mg/kg of patient body weight, and administering arsenic trioxide in said dosage amount to said patient for a maximum of 60 days or until bone marrow remission, wherein said administering constitutes a first administration.

2 The method of claim 1, further comprising a second administration of a therapeutically effective amount of about 0.15 mg/kg arsenic trioxide for 25 doses.

3. The method of claim 2, wherein said second administration is administered 3 to 6 weeks after said first administration.

4. The method of claim 3, wherein said second administration is administered for up to five weeks.

5. The method of claim 4, wherein said second administration is administered at five doses per week.

6. The method of claim 2, further comprising repeating said second administration.

7. The method of claim 6, wherein said second administration is repeated every 3 to 6 weeks.

8. The method of claim 7, wherein said second administration is repeated until a total of between two and ten cycles of said second administration are completed.

9. The method of claim 8, further comprising repeating said second administration until a total of two cycles of said second administration are completed.

10. The method of claim 8, further comprising repeating said second administration until a total of ten cycles of said second administration are completed.

11. A method for treating acute promyelogenous leukemia in a human, comprising administering a therapeutically effective amount of about 0.15 mg/kg arsenic trioxide once per day, for a maximum of 60 days or until bone marrow remission, wherein said administering constitutes a first administration.

12. The method of claim 11, further comprising a second administration of a therapeutically effective amount of about 0.15 mg/kg arsenic trioxide once per day for 25 doses.

13. The method of claim 12, wherein said second administration is administered 3 to 6 weeks after said first administration.

14. The method of claim 13, wherein said second administration is administered for up to five weeks.

15. The method of claim 14, wherein said second administration is administered at five doses per week.

16. The method of claim 12, further comprising repeating said second administration.

17. The method of claim 16, wherein said second administration is repeated every 3 to 6 weeks.

18. The method of claim 17, wherein said second administration is repeated until a total of between two and ten cycles of said second administration are completed.

19. The method of claim 18, further comprising repeating said second administration until a total of two cycles of said second administration are completed.

20. The method of claim 18, further comprising repeating said second administration until a total of ten cycles of said second administration are completed.